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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	John C. Pederson
Application No.:	10/609,242
Filed:	June 27, 2003
For:	LED Warning Signal Light and Movable Support
Examiner:	Julie Bichngoc Lien
Group Art Unit:	2636

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Docket No.: E30.2-8140-US16

DECLARATION OF ROMAN MARJAMAA
PURSUANT TO 37 C.F.R. §132

My name is Roman Marjamaa and I am a professionally accredited electrical engineer having received a degree in electrical engineering from St. Cloud State University in May of 2001. I am currently employed as an electrical engineer with 911EP, Inc., and I am familiar with the invention disclosed in patent application Serial No. 10/095,694.

I have also reviewed the Hall U.S. Patent No. 5,585,783; the Deese U.S. Patent No. 5,806,965; the Schugt U.S. Patent No. 5,934,694; and the Miyamoto U.S. Patent No. 5,809,681.

I have attached hereto a marked-up copy of Figure 3 of the Hall U.S. Patent No. 5,585,783 as Exhibit 1. I have also reviewed the Examiner's assertion that

"Hall teaches: ...a controller U1 in communication with light sources for selectively activating the LED's thereby producing more than two different types of visually distinct warning light signals (that is, continuous, flashing, or rotating) (see Fig. 5), the LED receiving power from a power source wherein the light support. ...Therefore, it would have been obvious to one of ordinary skill in the art to use a warning light of Hall's in the system of Schugt because the warning light in Hall would attract a viewer's attention more than the light in Schugt since it is capable of producing many types of lighting effect."

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The invention disclosed in the Hall '783 patent is restricted, and may only illuminate all of the LED's within the Hall beacon simultaneously with a single light signal.

A review of the circuit diagram of Figure 3 of the Hall '783 patent, as attached hereto as Exhibit 1, shows that all of the LED's numbered 1-40 are physically and electrically connected in a single circuit, and are illuminated at the same time, to provide the identical signal. All of the LED's receive power through a node which I have labeled as "node A" which passes down the center of the circuit diagram horizontally left to right. Current flows outwardly from "node A" in both an upward and downward direction, to pass through the LED's. All of the LED's 1-40 are connected to a common negative terminal/ground wire which I have identified by reference numeral B.

The proper reading of the Hall '783 disclosure indicates that each string of LED's is continuous, and each string is connected to the identical circuitry. In a first embodiment all LED's 1-40 may be continuously on; or all LED's 1-40 may be illuminated to provide a flashing signal. In a second embodiment, each string of LED's is continuous, and each string is connected to the identical circuitry. All LED's 1-40 may be continuously on; or all LED's 1-40 may be illuminated to provide a sequential illumination signal.

A review of Figure 3 shows that LED's 1-40 are not physically or electrically connected to more than one circuit. The Hall '783 reference does not show that a collection of LED's, less than the total number 1-40, are electrically engaged to another circuit; Figure 3 does not disclose that a collection of less than all of LED's 1-40 may be illuminated with one type of light signal, and the remaining LED's may be illuminated with a different second signal; Figure 3 does not disclose that first and second signals may be either illuminated simultaneously and/or combination.

A review of Figure 5 and the specification of the Hall '783 patent does not show or teach that the Hall device may provide simultaneous illumination of at least two different light signals or that at least two different light signals may be illuminated in combination. Figure 5 is a block diagram which only shows that separate and distinct electrical pathways exist between a power source and an illumination source. The left

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and right pathways, may include a flasher circuit and a sequencer circuit respectively. Figure 5 is silent with respect to the simultaneous illumination, or the illumination in combination, of at least two different types of light signals.

A review of the remaining specification of the '783 patent is required to be made to attempt to identify disclosure related to the topics of the simultaneous generation of at least two light signals and/or the generation of at least two light signals in combination. A review of the remainder of the Hall '783 specification reveals a failure of the Hall '783 patent to teach simultaneous illumination of at least two different light signals or the illumination of at least two light signals in combination. The specification and Figure 3 of the Hall '783 patent teach the illumination of a single light signal due to the limitation of a single output on the industry standard 555 circuit U1, and the entire set of light emitting diodes being electrically connected to a single node having a single input. The Hall '783 specification supports Figure 3 where one, and only one, light signal may be provided in the Hall '783 device at any time and where no simultaneous generation of two or more light signals and no generation of two or more light signals in combination is disclosed.

A person skilled in the art upon review of the Hall '783 patent would not have been able to use the disclosure to conceive, design, and create a controller which would generate at least two different types of light signals either simultaneously and/or in combination. To provide a controller capable of regulating a composite lighting effect where two or more different light signals were either generated simultaneously and/or in combination, a person skilled in the art would have scratched the Hall '783 disclosure and would have initiated a complete redesign from ground zero. A hypothetical duplication of a second circuit "U2" connected to all the LED's as disclosed in the Hall '783 patent, would not have worked, and would have shorted out, because no cooperative interrelationship would have existed between "U1" and "U2". "U1" has a single output and is physically incapable of a cooperative interrelationship with an additional industry standard integrated 555 circuit as disclosed in the Hall '783 patent. A split of the LED's into two independent arrays, where one array included circuit U1 and a second array included circuit U2 would have required the electrical redesign of the connections within

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the array of LEDs and further would have provided no assistance in the resolution of the problem to provide two or more different light signals in combination. A cooperative interrelationship between U1 and U2 would have been absent because the industry standard 555 integrated circuit of U1 includes only a single output, rendering cooperation with another industry standard 555 integrated circuit physically impossible.

A person skilled in the art attempting to design a controller capable of illuminating two different light signals simultaneously and/or in combination would have been required to look significantly beyond the Hall '783 disclosure to accomplish the desired result. Therefore it is my opinion that the invention described in the claims of the present application would not have been obvious to a person of ordinary skill in the art following a review of the Hall '783 reference. A person skilled in the art upon reading the Hall '783 reference, would not have been able to make the invention as disclosed in the current application and as claimed herein. The electrical components and circuits described in the Hall '783 patent are physically incapable of illuminating more than one single light signal and are physically incapable of cooperation to provide a combination light signal. Therefore, Applicant's invention is not obvious to a person of ordinary skill in the art in view of the Hall '783 patent.

Attached Figure 3 shows that the circuit U1 permits electricity to flow from battery to the gate or switch located at "Q1" which is most probably a transistor. Electricity flows past gate "Q1" through "node labeled A".

The circuit of attached Figure 3 discloses one, and only one, output "Q1". The Hall '783 patent at column 5, lines 20-25 indicates that the integrated circuit U1 is an industry standard 555 stable multi-vibrator circuit with driver transistor. I have attached hereto and incorporate by reference herein electrical specifications and description of the industry standard 555 stable multi-vibrator circuit as Exhibit 2. The electrical specifications and descriptions for the industry standard 555 circuit identifies only a single output. The existence of only a single output on the industry standard 555 circuit physically restricts and limits the circuit to the illumination of a single light signal at a time. It is physically impossible for the circuit of Figure 3 of the Hall '783 reference and/or the industry standard 555 circuit U1 to illuminate more than one light signal at a

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time. As disclosed in the Hall '783 patent, it is also physically impossible for the circuit of Figure 3 of the Hall '783 reference and/or the industry standard 555 circuit U1 to change light signals without activation of a switch through human intervention. The circuit of Figure 3 of the Hall '783 reference and/or the industry standard 555 circuit U1 is physically incapable of providing at least two different light signals simultaneously or in combination.

In addition, Figure 3 of the Hall '783 reference is inoperable and would short the circuit U1 preventing illumination of a flashing or a continuously on light signal. Figure 3 of the Hall '783 reference indicates that three lines labeled VOLTAGE are connected to both the positive and negative terminals of the battery. This would result in a short in the circuit. The three lines labeled VOLTAGE, in order to be operable, are required to be electrically connected exclusively to the positive terminal of the battery. The negative terminal of the battery is required to be electrically connected to ground, and it is not. The VCC pin of Figure 3 is required to be connected to the positive terminal of the battery, and it is not. Further, the VCC pin of Figure 3 of the Hall '783 reference is not disclosed as being at least 4.5 volts as required by the industry standard 555 circuit U1 datasheet. As drawn, VCC pin (8) is electrically connected to the negative terminal and would therefore have negative voltage as U1 is referenced to ground. The U1 industry standard 555 integrated circuit requires that VCC pin have a minimum positive voltage of 4.5 which it does not have and which is not disclosed. The electrical circuit of Figure 3 of the Hall '783 reference as depicted would short and not be operable for the provision of a light signal.

I respectfully assert that the teaching of a composite light signal formed of two light signals simultaneously, or two light signals in combination, is not obvious and is not taught in the Hall '783 reference. In order to provide for a plurality of available light signals, for illumination of two or more signals simultaneously, or two or more signals in combination, a significant physical modification and electrical redesign of all of the circuits as disclosed in the Hall '783 reference would be required.

Each light emitting diode and/or group of light emitting diodes of the present application may be illuminated by the at least one controller with one of any

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desired number of "different types of light signals" at any given moment in time, where adjacent LED's or groups of LED's may be independently illuminated with different light signals, to provide a composite lighting effect. The composite lighting effect may include at least two different types of visually distinct warning light signals simultaneously or may include at least two different types of visually distinct warning light signals in at least one combination.

The Hall '783 reference does not teach the independent illumination of multiple segments and/or independent illumination of individual LED's. Hall '783 does not teach that at least one controller may independently illuminate multiple segments and/or may independently illuminate individual light emitting diodes.

The flasher circuit as disclosed in the Hall '783 reference is not a controller as described and claimed by Applicant herein.

A sequencer circuit as disclosed in the Hall '783 reference is not a controller as disclosed and claimed by Applicant herein.

A continuously on light signal as disclosed in the Hall '783 reference is not a controller as disclosed and claimed by Applicant herein.

In order to create at least one operational controller, problems such as, the selection and illumination of multiple segments or groups or individual LED's simultaneously and/or in combination; the problem of multiple connections between the LED's and the controller; the problem of independent operation of each segment and/or LED with respect to another segment or individual LED; the problem of thermal conductivity; and the selection of at least two different types of visually distinct warning light signals for generation within one or more segments independent of another segment were required to be resolved. None of these problems were present in the simplistic beacon of the Hall '783 reference. The solutions to these problems are not trivial and require a complete electrical redesign of a Hall device, and do not constitute a choice in design, especially when a completely different problem is to be solved.

The Hall '783 reference is directed to technology where independent circuits are utilized, and a manual selection switch is used, in order to activate the

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illumination of a single type of light signal within a beacon. This technology did not teach the simultaneous illumination of at least two warning light signals. Nor did this technology teach the illumination of at least two warning light signals in at least one combination.

If a flasher circuit was disclosed having a timer which was set to flash at $\frac{1}{2}$ second intervals, i.e., $\frac{1}{2}$ second on, $\frac{1}{2}$ second off (repeat) and a change were made to physically modify the flasher circuit by substitution of resistors and capacitors to alter the flashing rate to $\frac{1}{4}$ second intervals, i.e., $\frac{1}{4}$ second on, $\frac{1}{4}$ second off (repeat), and the Examiner were to assert that the difference in the circuits were a matter of choice of design, then I would agree. I do not agree that the addition of at least one controller which significantly changes the operational characteristics of a device related to the illumination of simultaneous and combination light signals constitutes a choice in design.

I have also reviewed the Deese U.S. Patent No. 5,806,965. This patent discloses the use of colored LED's to form a white light signal. The Deese '965 patent does not address the problems I have identified above related to the generation of two different types of light signals either simultaneously and/or in combination. It is my opinion that the invention described in the present application would not have been obvious to a person skilled in the art following a review of the Hall '783 patent and the Deese '965 patent either individually and/or in combination.

Additionally, I have reviewed the Schugt U.S. Patent No. 5,934,694. This patent discusses the use of a rotating beacon mounted on a pole as connected to a device used to retrieve shopping carts from a parking lot. The Schugt '694 patent does not address the problems I have identified above related to the generation of two different types of light signals either simultaneously or in combination. It is my opinion that the invention described in the present application would not have been obvious to a person skilled in the art following a review of the Hall '783 patent and a review of the Schugt '694 patent either individually and/or in combination.

In addition, it is my opinion that the invention described in the present application would not have been obvious to a person skilled in the art following a review

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of the Hall '783 patent; a review of the Deese '965 patent; and/or a review of the Schugt '694 patent either individually and/or in combination.

I have also reviewed the Miyamoto U.S. Patent No. 5,809,681. This patent discloses the use of a plurality of planoconvex lenses which are arranged into a desired type of signal, i.e., traffic signal. Each of the planoconvex lenses collects and redirects light to illuminate a preset word or symbol. The Miyamoto '681 patent does not address the problems I have identified above related to the generation of two different types of light signals either simultaneously and/or in combination. It is my opinion that the invention described in the present application would not have been obvious to a person skilled in the art following a review of the Hall '783 patent and the Miyamoto '681 patent either individually and/or in combination. In addition, it is my opinion that the invention described in the present application would not have been obvious to a person of ordinary skill in the art following a review of the Hall '783 patent; a review of the Schugt '694 patent; and/or a review of the Miyamoto '681 patent either individually and/or in combination.

I further declare that all statements made herein of my knowledge are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Date: 11-29, 2004

By: 

Roman Marjamaa

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